POWER TRIODE

PX4

JULY, 1956

DESCRIPTION

Type PX4 is a directly heated power triode for the output stage of receivers and amplifiers where a considerable undistorted power output is required with an anode voltage up to 300.

The filament is of the robust oxide coated type and may be heated from A.C. through a suitable step-down transformer.

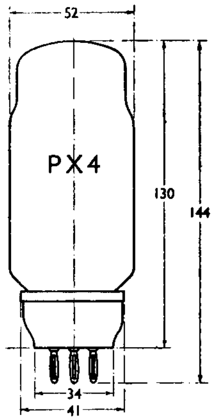
RATINGS

Filament Voltage	...	4·0	volts
Filament Current	...	1·0	approx. amp
Anode Voltage	...	300	max. volts
Anode Current	...	50	mA
Anode Dissipation	...	15	max. watts
Mutual Conductance	measured at Va = 100, Vg = 0	6	mA/V
Amplification Factor	measured at Va = 100, Vg = 0	5	
Impedance	measured at Va = 100, Vg = 0	830	ohms

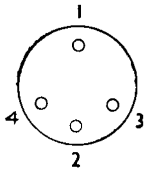
Capacitances :

Anode to Control Grid	...	13·7	approx. pF
Control Grid to Filament	...	7·7	,, ,,
Anode to Filament	...	3·9	,, ,,

DIMENSIONS



BASE



View looking on underside of base.

4-PIN

1 : Anode
2 : Control Grid
3 : Filament
4 : Filament

All dimensions are in mm. and are the maximum except where otherwise stated.

MARCONI'S WIRELESS TELEGRAPH COMPANY LIMITED

Head Office: Marconi House, Chelmsford . Telephone: Chelmsford 3221 . Telegraphic Address: Expanse, Chelmsford

OPERATING CONDITIONS

Single Valve Class A.

Anode Voltage	300	250	200	volts
Anode Current	50	60	30	mA
Bias Resistor	1000	600	1000	ohms
Anode Load Resistor	3500	2500	3500	ohms
Power Output	4·5	3·2	1·6	watts
Distortion	4	4	5	%
Input Signal	49	36	30	volts

Two Valves in Push-Pull.

Anode Voltage	300	250	volts
Anode Current (per pair)	100	116	mA
Bias Resistor (per valve)	1000	650	ohms
Bias Voltage	–50	–38	approx. volts
Anode Load Resistor	4000	3000	ohms
Power Output	13·5	9	watts
Distortion	2·5	2	%
Input Signal	110	80	approx. volts

A typical circuit is given showing the provision of independent automatic bias which necessitates separate filament windings for the PX4 valves.

The output transformer in all cases should have low leakage inductance, and be of ratio as below :—

$$\frac{\text{Total Primary Turns}}{\text{Total Secondary Turns}} = \sqrt{\frac{\text{Anode Load}}{\text{Speaker Impedance}}}$$

The circuit information given does not imply any licence under any patents which may be involved.

Precautions in Use.

The wiring and arrangement of the circuit should be such as to keep the capacitance between input and output circuits at as low a value as possible.

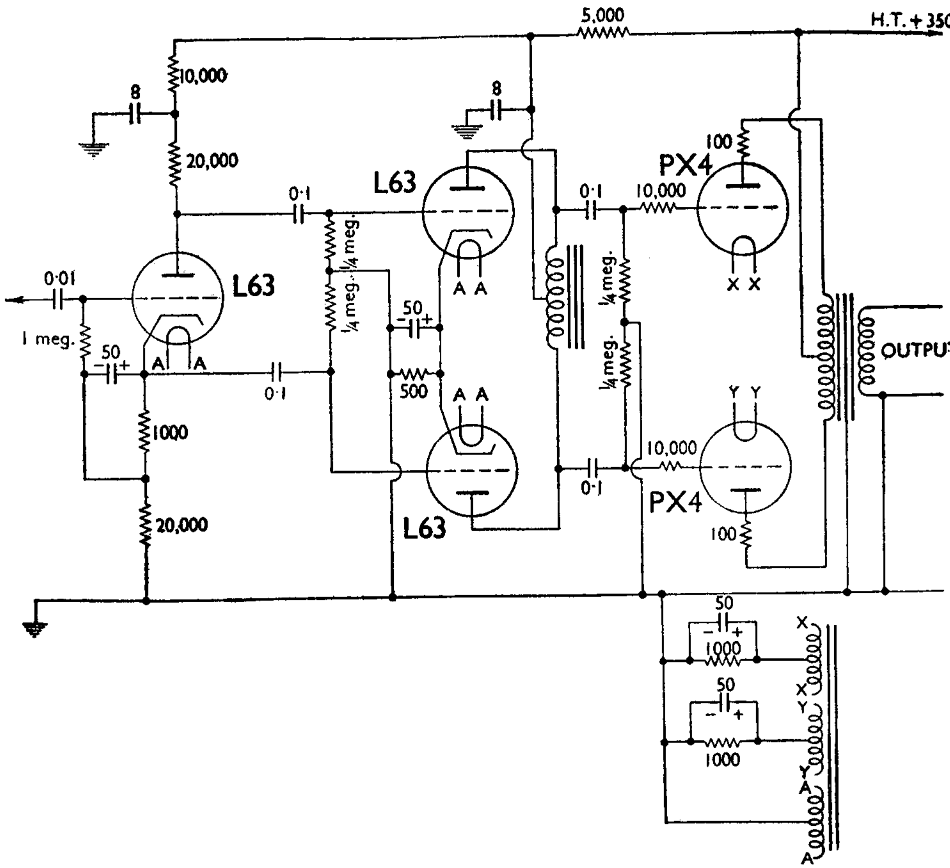
A grid stopper resistor to prevent parasitic oscillation is required, this should be wired close to the valve holder.

The total resistance in the grid circuit should in no case exceed 250,000 ohms.

Automatic bias should always be employed and it is recommended that separate bias should be used for each valve in the case of a push-pull circuit. In cases where the valves are operated well below the maximum voltage or wattage limit, however, a common bias resistor may be used.

Care should be taken to switch off the power supply when inserting or removing the valve from its socket, or when any adjustments are made, such as alteration to the grid bias.

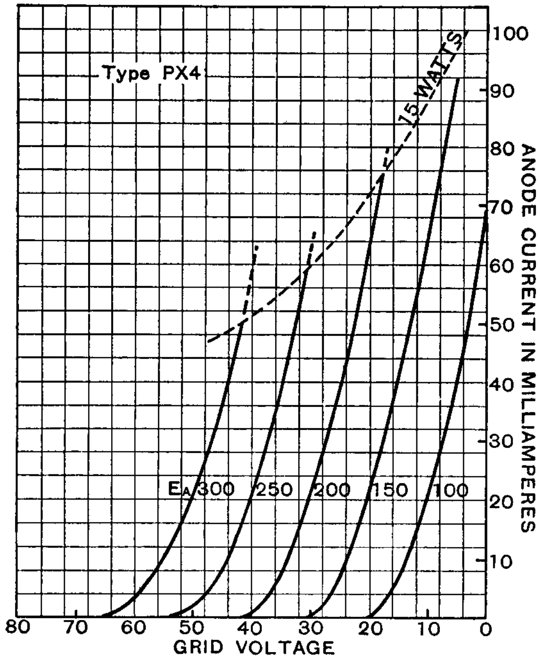
Adequate ventilation must be provided.

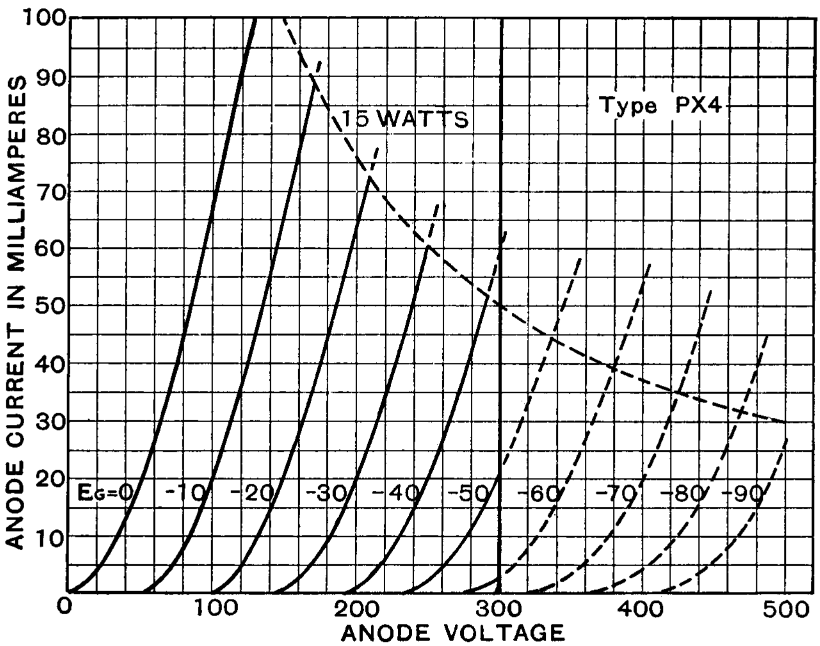


TWO VALVES IN CLASS ABI PUSH-PULL AMPLIFIER CIRCUIT.

If used as a radio receiver employing a diode-triode detector valve, type DL63 should be used in place of type L63 shown above as the first stage A.F. amplifier.

PX4





CHARACTERISTIC CURVES OF AVERAGE VALVE.

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